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Research Note

NORTHERN ROCKY MOUNTAIN
FOREST AND RANGE EXPERIMENT STATION

Missoula, Montana

No. 77 February 1950

# RECOMMENDATIONS FOR POISONING WESTERN HEMLOCK

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Defective hemlock in the western white pine type often retards the establishment and growth of more valuable but less shade-tolerant trees such as white pine, larch and Douglas-fir. Foresters sometimes must destroy unmerchantable hemlock in order to release reproduction of these more valuable species. Poisoning is one method of destroying such trees. Following are recommendations for poisoning western hemlock based on tests conducted at the Deception Creek Experimental Forest, Coeur d'Alene, Idaho. Two poisons, sodium arsenite and ammonium sulfamate, are discussed. Ammonium sulfamate is preferred because it is safer and easier to handle.

## SODIUM ARSENITE

A 40 percent solution, by weight, of sodium arsenite dissolved in water is recommended. A convenient container for the poison is a four-quart glass jar with a mouth small enough that a long-stemmed battery bulb will act as a stopper. The battery bulb is used to apply the solution to the tree.

The solution is applied in holes made by a poisoning-axe developed by the Southern Forest Experiment Station 1/, or in auger holes 3/4-inch in diameter and five inches deep. Punch the poisoning-axe holes at about stump height and drill the auger holes at a convenient height, (about 3½ feet) above ground level. Holes should be inclined about 45 degrees to prevent loss of solution.

Poisoning-axe holes should be punched at about 8-inch intervals around the circumference of the tree. Auger holes should be bored at intervals of about 24 inches around the tree. The poisoning-axe method is recommended because it is much quicker and easier than boring auger holes.

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1/ Pessin, L. J., and A. L. Sheperd, 1941. A Tool to Make Holes for Poison Injection. Southern Forest Experiment Station. Southern Forestry Notes No. 38, Unnumbered pp. illus.

Sodium arsenite is a powerful skin irritant and a deadly poison. Workers applying the poison should wear rubber-treated gloves and handle the solution with extreme care. Avoid spilling the solution on the ground or on the bark of the tree if there are livestock or wildlife in the area.

## AMMONIUM SULFAMATE
(Also called "Ammate" or "Dupont's Weed Killer")

Ammate is a more desirable poison than sodium arsenite because in small quantities it is not poisonous to men or livestock and is easy to handle.

Ammate may be applied as a saturated water solution in poisoning-axe holes, or in the form of crystals in axe cups. Either method kills effectively and is easy to apply. The poisoning-axe method is a little faster than the axe cup method, but it requires the purchase and care of a specialized tool. Chopping axe cups requires only tools already on hand and allows a larger dosage of poison.

To make a saturated solution of Ammate, dissolve Ammate crystals in warm water until no more crystals can be taken into solution. The solution can be carried and applied in the same way as that described for sodium arsenite solution; that is, in a glass jar and with a long-stemmed battery bulb. An oil can with a thumb pressure feed also works well.

The solution should be applied in poisoning-axe holes spaced four inches apart around the circumference of the tree.

To poison with Ammate crystals, apply the crystals in cups or notches chopped at about 8-inch intervals around the trunk of the tree at about stump height. A cup is made by chopping a small notch in the tree about an inch into the sapwood. Make the axe cuts downward to form a cup which will hold the crystals. One tablespoon of crystals should be applied to each cup while the cut is fresh; the crystals will be absorbed by the tree in about 24 hours.

Hemlock trees can be poisoned successfully in spring, summer or fall. Working in deep snow combined with punching holes in frozen trees would make winter poisoning difficult in the northern Rockies.



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MAR 29 1950
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